

Abstract of the Disclosure:

An active region 1 has diffusion layers 6a to 8a sandwiched by plural word-lines. The diffusion layer 6a sandwiched by word-lines 2 and 3 locates at a center of the active region 1 and connects to a bit-line through a contact. The diffusion layers 7a and 8a sandwiched by word-lines 2 and 3 and both sides of the active region 1 respectively are connected to capacitor portions. A cell structure is formed of two cell transistors. One cell transistor has the word-line 2 as a gate and the diffusion layers 6a and 7a as source and drain, respectively. The other cell transistor has the word-line 3 as a gate and the diffusion layers 6a and 8a as a source and a drain, respectively. The diffusion layers 7a and 8a placed outside of the active region 1 are n-type and have high carrier concentration of n-type at the region separated from word-lines than to the region close to the word-lines 2 and 3. A p-type substrate exhibits low concentration at the region outside the word-lines. As a results, it is possible to prevent the deterioration of refresh characteristic suffering from the adjacent word-line of the adjacent cell and to reduce fraction defective after packaging and reflowing processes.